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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/680,150 | 10/08/2003 | Roger Lin | VIAP0074USA | 5067 |
| 27765 | 7590 | 12/01/2005 | | EXAMINER |
| | | | | LUU, AN T |
| | | | ART UNIT | PAPER NUMBER |
| | | | | 2816 |

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|------------------------------|-----------------|--------------|
| | 10/680,150 | LIN, ROGER |
| Examiner | Art Unit | |
| An T. Luu | 2816 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 08 November 2005.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-5,8,10 and 15-21 is/are rejected.

7) Claim(s) 6,7,9,11-14 and 22 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11-8-05.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 8, 10 and 15-21 are rejected under 35 U.S.C. 102(e) as being anticipated by the Ghaderi et al reference (US Patent Application Publication 1002/0174374 A1).

Ghaderi discloses in figures 2-4 and their associated descriptions an apparatus to carry out a method of phase splitting for generating multi-phase clocks having the same frequency and predetermined phase differences between one another (See figure 4), comprising a plurality of reference clocks (source 1-5) each generating an output of a first frequency having a first phase difference from other reference clocks (See figure 4); and for each of the plurality of reference clocks, utilizing a plurality of periods in the output of a single reference clock to generate a plurality of output clocks (i.e., source 1 produces phase_1 and phase_6) each having a second frequency at a second phase difference from other output clock generated by said single reference clock, each period of the second frequency being equal to the sum of the plurality of periods utilized in the output of said single reference clock wherein the first phase difference is a multiple of the second phase difference as required by claim 1 (see figure 4).

As to claim 2, figure 4 discloses the first frequency (source-1) is a multiple of the second frequency (phase-1).

As to claim 3, as best understood, section [0027] discloses a ratio of the first phase difference to the second phase difference is the same as a ratio of the plurality of references clock to the plurality of output clocks.

As to claim 4, figure 4 discloses the first frequency is N (i.e., 2) times the second frequency, and the periods of the second frequency are triggered according to the plurality of periods utilized in the output of one of the reference clocks at intervals of at least (N-1) period (see source-1 and phase-1).

As to claim 5, it is clearly understood that shifting a signal by 360 degrees means no shifting has occurs since these signals are essentially the same. Further, figure 4 discloses each reference signal produce its own output clocks. Therefore, two difference reference clocks would produce different output signals.

As to claim 8, as best understood, figure 4 discloses the output clock (phase-1) is triggered by the first and second periods of the reference signal (source-1).

As to claim 10, Ghaderi discloses in figures 2-4 and their associated descriptions a multi-phase clock generating circuit for generating two output clocks (phase-1 and phase-6) of the same frequency with a predetermined phase difference between each other (See figure 4), comprising a clock generator (not shown) for generating two reference clocks (source 1-2) having the same frequency that is multiple greater than 1 of the frequency of the two output clocks (see figure 4, the two reference clocks having a predetermined reference phase difference between each other; and a phase interpolator 210 for generating two corresponding output clocks wherein each period of these two output clocks is triggered by a corresponding reference period of one of the two reference clocks, which is apart from other reference periods of said one of the

two reference clock by at least one or a plurality periods of said one of the two reference clocks (phase-1 and phase-6 in fig. 4).

As to claims 15-16, the scopes of these claims are similar to that of claims 2-3. Therefore, they are rejected for the same reason set forth above.

As to claims 17-20, they are rejected for reciting method derived from the apparatus of claim 10 which is rejected as noted above. It is noted that N=2 is the case to be considered in claim 20.

As to claim 21, it is rejected since the recited operation is seen to be inherent in the operation of the Ghaderi et al circuitry.

Response to Arguments

3. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

4. Claims 6-7, 9, 11-14 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose an apparatus and method thereof comprising elements being

configured as recited in claims. Specifically, none of the prior art teaches or fairly suggests the following limitations:

- Determining a first reference period of the first reference clock and also finding a first reference period in the second reference clock lagging the first reference period of the first reference clock; dividing the frequency of the first reference clock at a time point corresponding to the first reference period of the first reference clock in order to generate an output clock; and dividing the frequency of the second reference clock at a time point corresponding to the first reference period of the second reference clock in order to generate another output clock as required by claim 6.
- To generate a corresponding intermediate clock so that each reference period of the corresponding intermediate clock will lag the first reference period in the first reference clock; and dividing the frequency of the first reference clock and the corresponding intermediate clock to generate two corresponding output clocks as required by claim 9.
- A frequency division module for dividing the frequency of the first reference clock and the corresponding intermediate clock to generate two corresponding output clock; wherein each reference period of the corresponding intermediate clock lags the first reference period of the first reference clock as required by claim 11.
- a first frequency divider for generating an output clock by dividing the frequency of the first reference clock; and a second frequency divider for generating the other output clock by dividing the frequency of the second reference clock after receiving the corresponding reset signal as required by claim 13. And,
- triggering each period of the third output clock according to each period of the

second reference clock; wherein output of the third output clock is of the same frequency as said two output clocks and has the predetermined phase difference from said two output clocks as required by claim 22.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

An T. Luu
11-19-05 *RW*

Kenneth B. Wells
Kenneth B. Wells
Primary Examiner